

**Online data supplement**

**Table E1.** All general linear model comparisons, with details of Holm's Bonferroni adjustment

Variable	Factor	Raw p value	Partial eta squ.	p value rank	Adj. p value	Interaction	Adj. p value
<b>Between group comparisons:</b>							
PavCO <sub>2</sub>	Group	<0.001	0.759	1	0.010	Time*group	0.014
pH	Group	<0.001	0.555	3	0.011	Time*group	0.019
V <sub>E</sub>	Group	0.045	0.146	16	0.585	Time*group	0.612
V <sub>D</sub> /V <sub>T</sub> <sup>a</sup>	Group	0.085	0.110	19	0.850	Time*group	>0.999 <sup>a</sup>
<b>OHS group, response to oxygen:</b>							<b>Raw p value</b>
PavCO <sub>2</sub> (FiO <sub>2</sub> 0.28) <sup>b</sup>	Time	<0.001	0.33	6	0.013	Time*concentration	0.046 <sup>b</sup>
PavCO <sub>2</sub> (FiO <sub>2</sub> 0.50) <sup>b</sup>	Time	<0.001	0.47	4	0.012	Time*concentration	0.046 <sup>b</sup>
PavCO <sub>2</sub>	Concentration	0.021	0.35	14	0.315	Concentration*group	0.013
pH (FiO <sub>2</sub> 0.28) <sup>b</sup>	Time	0.029	0.18	15	0.406	Time*concentration	0.003 <sup>b</sup>
pH (FiO <sub>2</sub> 0.50) <sup>b</sup>	Time	<0.001	0.58	2	0.011	Time*concentration	0.003 <sup>b</sup>
V <sub>E</sub> (FiO <sub>2</sub> 0.28) <sup>b</sup>	Time	0.997	0.00	29	>0.999	Time*concentration	0.041 <sup>b</sup>
V <sub>E</sub> (FiO <sub>2</sub> 0.50) <sup>b</sup>	Time	0.014	0.21	13	0.224	Time*concentration	0.041 <sup>b</sup>
V <sub>D</sub> phys	Time	0.133	0.13	21	>0.999	Time*concentration	0.580
V <sub>T</sub>	Time	<0.001	0.43	5	0.012	Time*concentration	0.229
RR	Time	0.334	0.08	23	>0.999	Time*concentration	0.648
<b>Control group, response to oxygen:</b>							<b>Raw p value</b>
PavCO <sub>2</sub> (FiO <sub>2</sub> 0.28) <sup>b</sup>	Time	0.066	0.15	18	0.726	Time*concentration	0.043 <sup>b</sup>
PavCO <sub>2</sub> (FiO <sub>2</sub> 0.50) <sup>b</sup>	Time	0.303	0.09	22	>0.999	Time*concentration	0.043 <sup>b</sup>
PavCO <sub>2</sub>	Concentration	0.372	0.06	24	>0.999	Concentration*group	0.013
pH	Time	0.464	0.07	27	>0.999	Time*concentration	0.128
V <sub>E</sub> (FiO <sub>2</sub> 0.28) <sup>b</sup>	Time	0.878	0.02	28	>0.999	Time*concentration	0.013 <sup>b</sup>
V <sub>E</sub> (FiO <sub>2</sub> 0.50) <sup>b</sup>	Time	0.001	0.31	9	0.019	Time*concentration	0.013 <sup>b</sup>
V <sub>D</sub> phys	Time	0.005	0.75	11	0.090	Time*concentration	0.085
V <sub>T</sub> (FiO <sub>2</sub> 0.28) <sup>c</sup>	Time	0.223	-	26	>0.999	-	-
V <sub>T</sub> (FiO <sub>2</sub> 0.50) <sup>c</sup>	Time	0.145	-	25	>0.999	-	-
RR	Time	0.01	0.22	12	0.170	Time*concentration	0.195
<b>OHS &amp; controls combined, response to oxygen:</b>							<b>Raw p value</b>
V <sub>D</sub> V <sub>T</sub> <sup>a</sup>	Time	<0.001	0.22	7	0.012	Time*concentration	0.121 <sup>a</sup>

FiO<sub>2</sub>: fraction of inspired oxygen; PavCO<sub>2</sub>: arterialised-venous carbon dioxide; V<sub>E</sub>: minute ventilation; V<sub>D</sub>/V<sub>T</sub>: physiological dead space to tidal volume ratio; V<sub>D</sub>phys: physiological dead space; V<sub>T</sub>: tidal volume; RR: respiratory rate. Raw p: significance level before Bonferroni adjustment; Adj. p value: significance level after Bonferroni adjustment; partial eta squ.: effect size, partial eta squared; p value rank: rank of raw p value for Bonferroni adjustment. <sup>a</sup>data from both groups and both concentrations analysed together, as there were no interaction effects; <sup>b</sup>data from FiO<sub>2</sub> 0.28 and FiO<sub>2</sub> 0.50 test analysed separately due to significant interaction effect, time\*concentration; <sup>c</sup> Friedman test performed (non-parametric data).